

OPTIMIZATION OF APPLICATION PROCEDURE FOR DYEING WITH TURMERIC RHIZOMES

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ABSTRACT

The present study was carried out at Department of Clothing and Textiles, Collage of Post Graduate Studies, G, B Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India. The present study was framed to develop 100% natural bright yellow colour for dyeing of wool without the use of any synthetic stuffs as mordants. The water soluble yellow dye from turmeric rhizomes (Curcumin) is very fugitive in nature. The hue becomes dull with exposure to time and temperature. The conventional aqueous extraction procedure involves a time gap between the extraction of dye and actual dyeing of the substrate. This exposure to time gap makes the dye dull and unappealing. To achieve the best dyeing results, another way of dyeing was tried and tested, “Simultaneous extraction and dyeing” where dyeing of substrate is carried out in the same water bath along with the extraction of dye from the raw material. Observations proved that less temperature and reduced time of dyeing give better results in terms of colour appeal. Whereas analysis of the shade cards after a prolonged time gap shows that the high temperature and prolonged dyeing time produced shades with more durable dyeing. Thus, any of the dyeing technique can be used as per the requirement of the end product. A number of shades were developed with good to excellent washing fastness, through variations in dyeing conditions only. The results of numerous experiments reveal that same dye produced different shades under different dyeing conditions. Standardized recipes have been developed for each shade. The final samples were tested for colour fastness to light and washing as per standards laid by Bureau of Indian standards at Indian Institute of Technology Delhi.

KEYWORDS: Turmeric Rhizomes, Curcumin, Aqueous Extraction of Dye, Colorimetric Tests, “Simultaneous Extraction and Dyeing”